

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

GOTOU et al.

Application No.: Unassigned

Art Unit: Unassigned

Filed: June 18, 2001

Examiner: Unassigned

For: HIGH FREQUENCY  
POWER AMPLIFIER

**CLAIMS PENDING AFTER PRELIMINARY AMENDMENT**

1. (Amended) A high frequency power amplifier, comprising:  
a transistor for amplifying signals; and  
an input-side impedance matching circuit connected to an input side of said transistor, wherein said input-side impedance matching circuit provides an impedance of a substantially open circuit load with respect to even number higher harmonics of a fundamental wave of a high frequency signal.

2. (Amended) The high frequency power amplifier according to claim 1, wherein a phase angle of reflection of a second harmonic is 0 to 90 degrees, and reflection is 0.6 to 1.0, with respect to a reflection coefficient when said input-side impedance matching circuit is viewed from the input side of said transistor.

3. (Amended) The high frequency power amplifier according to claim 2, wherein said input-side impedance matching circuit comprises a third harmonic reflecting circuit, a second harmonic processing circuit, and a fundamental wave matching circuit, disposed sequentially from a signal input terminal.

4. (Amended) The high frequency power amplifier according to claim 1, wherein said input-side impedance matching circuit comprises a higher harmonic reflecting

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circuit, a second harmonic processing circuit, and a fundamental wave matching circuit, disposed sequentially from a signal input terminal.

5. (Amended) A high frequency power amplifier, comprising:  
a transistor for amplifying signals; and  
an input-side impedance matching circuit connected to an input side of said transistor, wherein said input-side impedance matching circuit provides an impedance of a substantially short-circuit load with respect to odd number harmonics of a fundamental wave of a high frequency signal.

6. (Amended) The high frequency power amplifier according to claim 5, wherein a phase angle of reflection of a third harmonic is 110 to 270 degrees, and reflection is 0.6 to 1.0, with respect to a reflection coefficient when said input-side impedance matching circuit is viewed from the input side of said transistor.

7. (Amended) The high frequency power amplifier according to claim 6, wherein said input-side impedance matching circuit comprises a third harmonic reflecting circuit, a second harmonic processing circuit, and a fundamental wave matching circuit, disposed sequentially from a signal input terminal.

8. (Amended) The high frequency power amplifier according to claim 5, wherein said input-side impedance matching circuit comprises a third harmonic reflecting circuit, a second harmonic processing circuit, and a fundamental wave matching circuit, disposed sequentially from a signal input terminal.

9. (Amended) A high frequency power amplifier, comprising:  
a front stage transistor;  
a rear stage transistor; and  
an inter-stage impedance matching circuit connected between said front stage transistor and said rear stage transistor for matching impedances, wherein higher harmonics generated in said front stage transistor are inputted into said rear stage

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transistor, and a higher harmonic load of said rear stage transistor is adjusted by said inter-stage impedance matching circuit.

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